

A CLINICAL STUDY OF BREECH NEONATES

by

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Introduction

Breech neonates are associated with high morbidity and mortality. It is mainly because of the difficulties encountered with the aftercoming head hence asphyxia, intracranial injuries and their consequences are commonly found in neonates born of breech deliveries. This study was attempted to correlate various maternal and neonatal factors with the overall outcome of breech deliveries.

Material and Methods

All neonates born of breech delivery were included in the study. Maternal age, parity and other associated complications were noted. All the breech deliveries were attended by residents from the neonatal unit. Newborns were examined for apgar score assessment, weight, gestational age, presence of any congenital anomaly, evidence of any injury etc. They were all kept in the neonatal nursery for a minimum period of 24 hours after which, if healthy, they were transferred to the mother. They were followed for a period of 7 days. Any complication arising within this period was recorded.

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Observations

Two hundred and sixty-four breech neonates were delivered out of a total of 8251 deliveries conducted in the year 1979 at the State Zenana Hospital, Jaipur. The percentage breech delivery was 3.2%. Out of these, 123 cases were booked while 141 were brought in emergency from and around the city. One hundred and twelve breech deliveries resulted in still born neonates, while rest 152 were born alive.

Table I shows relation of breech outcome to age and parity of mother. It was found that maximum breech delivery took place in the age group 21 to 25 years and in para 5 and above. The still birth rate was maximal in age group below 20 years and in 2 to 4 para, while neonatal deaths were highest in age group 21 to 25 years and in first parity.

Table II shows various anthropometric measurements in live neonates born of breech delivery. Maximum breech neonates weighed between 2500 to 3000 gms., measured 45 to 50 cms. in length and 32 to 35 cms. in head circumference. Neonatal deaths were encountered maximally in weight group of 1001 to 1500 gms.

Table III shows type of breech delivery and perinatal loss. It shows that still birth were maximum in spontaneous breech delivery, while neonatal deaths were maximum in breech with cord prolapse

TABLE I
Outcome of Breech Neonates in Relation to Maternal Factors

	Total births	Total breech	Per cent breech	Live breech	Still births		Neonatal deaths	
					No.	%	No.	%
Age in years								
Below 20	866	31	3.7	11	20	64.5	2	7.1
21-25	2684	194	7.2	106	88	45.5	21	75.0
26-30	2956	24	0.8	20	4	16.6	4	14.2
Above 30	1001	15	1.4	15	—	—	1	3.5
Parity								
First	2248	90	4.0	78	12	13.3	21	75.0
2-4	5198	117	2.2	49	68	58.1	4	14.2
5 & Above	805	57	7.1	25	32	56.1	3	10.6

TABLE II
Relation of Neonatal Factors with Outcome of Breech

	Breech		Neonatal deaths	
	No.	%	No.	%
Weight in gms.				
Below 1000	2	1.3	1	3.5
1001-1500	7	4.5	11	39.2
1501-2000	37	24.6	8	28.5
2001-2500	43	28.2	4	13.2
2501-3000	46	30.5	4	13.2
3001 and above	17	11.2	—	—
Length in cms.				
Below 35	8	5.26	—1	3.5
35-40	10	6.5	5	17.8
40-45	33	21.7	10	35.7
45-50	101	66.6	12	42.8
Above 50	—	—	—	—
Head circumference in cms.				
Below 28	6	3.9	7	25.0
28-32	44	30.2	13	46.4
32-35	100	65.8	8	28.5
Above 35	2	1.3	—	—

(leaving aside twin breech in which there were only 4 cases).

Table IV shows the pattern of morbidity encountered in breech neonates. Neonatal septicemia (56.7%) and asphyxia neonatorum (26.8%) were

common illnesses seen. Mortality in these children was because of asphyxia neonatorum (38.5%) and neonatal septicemia (35.7%). A total of 10 neonates out of 152 showed congenital malformations as shown in Table V.

TABLE III
Type of Delivery and Perinatal Loss

Type of delivery	Total No.	Still births		Neonatal deaths		Perinatal loss	
		No.	%	No.	%	No.	%
Spontaneous	90	60	66.6	7	7.7	67	74.3
Breech extraction	126	43	34.1	15	11.9	58	46.0
Cord prolapse	22	3	13.6	3	13.6	6	27.2
Forceps	18	4	22.2	1	5.5	5	27.7
Caesarean section	4	2	50.0	—	—	2	50.0
Twin breech	4	—	—	2	50.0	2	50.0
Total	264	112	42.4	28	10.5	140	52.9

TABLE IV
Causes of Morbidity and Mortality in Live Born Breech Neonates

Causes	Morbidity		Mortality	
	No.	%	No.	%
Asphyxia neonatorum with intracranial injury	15	26.8	8	38.5
Hyaline membrane diseases	2	3.5	1	3.5
Neonatal septicemia	20	56.7	10	35.7
Hyperbilirubinemia	9	16.0	—	—
Erb's palsy	6	10.6	—	—
Fractures	4	7.1	—	—
Soft tissue injury	—	—	3	10.7
Congenital malformations	—	—	2	7.1
Extreme prematurity	—	—	4	14.3
Total:	56	21.2	28	10.5

TABLE V
Various Congenital Malformations in Breech Neonates

Congenital	Number	Per cent
Myelocele	3	30
Myelocele with hydrocephalous	1	10
Microcephaly	1	10
Hypospadias	2	20
Mongol	1	10
Club foot	2	20

Discussion

The incidence of breech delivery in the present series was 3.2%. The incidence

of breech delivery as report by other Indian workers was 2.1 to 6.4:

Associated Maternal Factors

In the present study, maximum breech deliveries and neonatal deaths were encountered in the age group 21 to 25 years and maximum still births in age group below 20 years while maximum breech deliveries occurred in 5th and above parity group; maximum still births occurred in 2 to 4 para and maximum neonatal deaths occurred in primiparous women.

Higher incidence of breech delivery in younger mothers has been reported by many workers (Kohiyar and Masani, 1964; Mukerjee and Barua, 1964; Rajani *et al*, 1964; Shivaraman, 1964; Lahiri, 1964; Prakash *et al*, 1979; Gupta *et al*, 1979). Randall (1961) reported that there was no difference in fetal loss in multipara or in primipara, while Rajani *et al* (1964) found higher incidence of perinatal loss in multipara.

Type of Breech Delivery

As shown in Table III, maximum breech deliveries were conducted by breech extraction (47.7%). Kohiyar and Masani (1964) reported incidence of spontaneous breech delivery as (90.5%). Mukerjee and Barua (1964) as 74.6%, while other workers like Singh and Marwah (1979), Misra and Singh (1979) reported higher incidence of assisted breech delivery.

In this series, still births were highest in spontaneous breech delivery (66.6%) and neonatal deaths in cord prolapse associated with breech (13.6%). Kohiyar and Masani (1964) reported 2.5% mortality in spontaneous breech and 31.67% in breech extraction. Mukerjee and Barua (1964) reported 53% mortality in spontaneous delivery and only 6% in assisted delivery. Similarly, higher incidence of perinatal loss associated with breech delivery other than spontaneous has been reported by Rajratnam (1964), Kirloskar (1964) and Prakash *et al* (1979). Rovinski (1973) reported that breech extraction with forceps led to a significant increase in traumatic mortality. Our series also show that use of forceps in breech extraction resulted in 22.2% of still births and 5.5% of neonatal deaths (Table III).

Neonatal Factors

In the present series, 30.4% (46 cases) were low birth weight, less than 2000 gms. (Table II). Kaupilla (1975) reported low birth weight breech babies in 20% cases. Overall neonatal mortality in breech was 10.5% while it was 52.1% in low birth weight breech babies. Similar high mortality in breech deliveries was reported by Kaupilla (1975), Mukerjee and Barua (1964), Kohiyar and Masani (1964), Prakash *et al* (1979) and Singh *et al* (1979). Misra *et al* (1979) reported perinatal mortality in breech as 1.8%. Gupta *et al* (1979) reported a high mortality in weight above 3000 gms.

Neonatal morbidity was encountered in 56 (21.2%) cases. Maximum cases (56.7%) developed neonatal septicemia. Other causes in order of frequency were asphyxia neonatorum (26.8%), hyperbilirubinemia (16%), Erb's palsy (10.6%), fractures of various bones (71%) and hyaline membrane disease (3.5%). Singh *et al* (1979) reported birth injuries in 49 breech deliveries in form of peripheral nerve injuries and intracranial hemorrhage. Misra *et al* (1979) reported perinatal morbidity in 13 cases (7.79%) in form of brachial plexus injury in 2, brain injury 3, bony fractures 2 and minor injuries in the rest.

Neonatal mortality was encountered in 10.5% (28 cases). The most common etiological factor being asphyxia neonatorum with birth injuries which was seen in 38.5% cases. Neonatal septicemia seconded the list accounting for 35.7% cases. Extreme prematurity (14.7%), soft tissue injuries (10.5%), congenital malformations (7.1%) and hyaline membrane disease (3.5%) followed later on. Birth injuries as a cause of mortality has been reported in 7.79% cases by Misra *et al* (1979). Rajani *et al* (1964)

reported mild intracranial injuries in 25 and fracture long bones in 12 cases. Shivaraman *et al* (1964) reported that out of 238 morbid neonates 25 had congenital malformations, 10 had cerebral hemorrhage, 6 had pulmonary diseases, 22 had infections and 67 cases had asphyxia. Kaupilla (1975) reported asphyxia as responsible for death in 1.2% cases. Prakash *et al* (1979) reported 42% mortality due to asphyxia. Rovinski *et al* (1973) reported mortality in breech as 8 times greater than in vertex presentation.

Congenital malformations were evidenced in 10 cases (Table V) in our study.

TABLE VI
Showing Apgar Scoring in Breech Neonates
At 1 Minute

Apgar Score	Number	Per cent
0-3	48	18.1
4-7	59	22.3
Above 7	157	59.4

Five cases (50%) had C.N.S. malformations, while Rajani *et al* (1964) reported 14 cases of congenital malformations out of 887 breech deliveries and Shivaraman *et al* (1964) 25 cases out of 238 breech deliveries. Kaupilla (1975) encountered central nervous malformations like hydrocephaly, enancephaly etc. in 1.5% cases and minor malformations in 4.5% cases. Prakash *et al* (1979) reported 2.77% cases of C.N.S. malformations and 7% other malformations.

Low apgar scores (less than 7 at one minute) were encountered in 40.4% cases.

Kaupilla (1975) reported low apgar scores in 24% while Prakash *et al* (1979) reported low apgar scores in 57.43% cases and Singh *et al* (1979) in 23%.

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